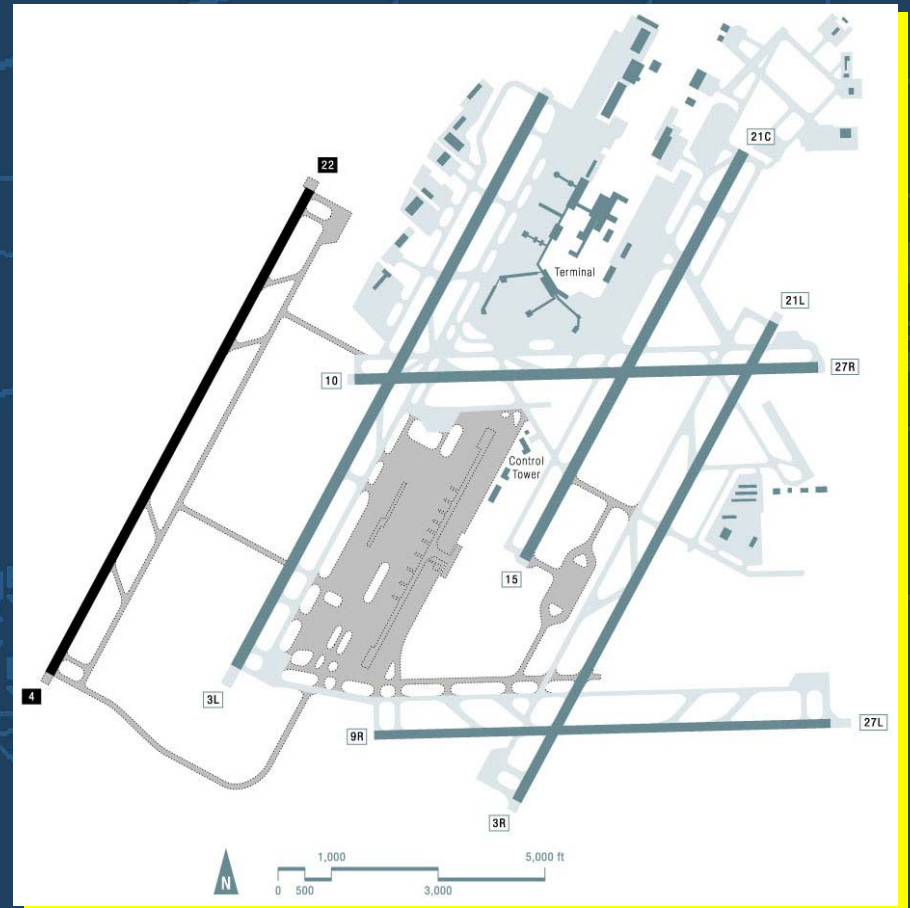




2002 Accomplishment: New Runway Entered Service at Detroit

- ✓ The Detroit runway became operational December 11, 2001
- By Spring 2002, the Airport Capacity Visual Meteorological Conditions index, representing the available capacity was up 16%





Performance Change: Detroit a Month Before and After New Runway



**Savings of \$3.2 million
in a single month, facilitated by
associated airspace redesign**





2002 Accomplishment & Performance Change: All Choke Point Actions are Complete

ESTIMATED USER BENEFITS OF THE NATIONAL CHOKE POINTS INITIATIVE

M. Stevens, K. Gormley, F. Moreno-Hilnes
March 25, 2002

BACKGROUND

At the request of the FAA, ATA-200, MITRE conducted a review of the user benefits associated with the Choke Points Actions (CPAs) implemented in support of the National Choke Points Initiative. This report provides a user benefits analysis based on the findings outlined in the September 12, 2001 report entitled "Improvements in the National Airspace System Based on Actions Taken in Support of the National Choke Points Initiative." The September report estimates the impact that improvements made to each of the seven Choke Points (CPs) had on ground and airborne delays in the NAS. Improvements were estimated comparing delay data from February to August 2000 (before the CPAs were implemented) to February to August 2001 (after the CPAs were implemented).

STUDY APPROACH

To estimate the user benefits associated with the system improvements identified in the September report, the delay savings were translated into the average delay reduction per flight in minutes. The delay data used in this analysis was obtained from Aviation System Performance Metrics (ASPM) and Operations Network (OPSNET) databases. The average Aircraft Direct Operating Cost (ADOC) per minute was applied to the delay reductions to estimate the overall cost savings realized by users as a result of improvements made to the seven national choke points (see Table 1).

Table 1: Estimated Cost Savings Associated with Choke Points Improvements

CP #	Choke Points Initiative Related Benefit	Average Delay Reduction per Flight in minutes	# of Related Flights from Feb-Aug 2001	Form 41 Direct Operating Costs / Minute	Potential Benefit of Reduced Operating Costs in Millions	Comments
1	Decreased Departure Delay for NY Westgate Departures	1.9	108,071	\$21.98	\$4.5	NY Weather Delays Decreased
2	Decreased Departure Delay for Northgate Departures	2.2	83,182	\$21.98	\$4.8	NY Weather Delays Decreased
3	Decreased Departure Delay for DC Departures	1.5	40,014	\$21.98	\$1.8	DC Weather Delays Decreased Significantly
3	Decreased Arrival Delay for NY Arrivals	3.1	57,353	\$20.40	\$5.3	NY Weather Delays Decreased
4	Departure/Airborne Delay Decreased for Departures over J547, but not Significantly	0	0	\$21.98	\$0.0	
5 and 6	Decreased Departure Delay for GL Departures (without CVG due to Comair Strike)	1.5	884,735	\$21.98	\$22.6	Operations Decreased Slightly
7	Departure Delay Decreased Significantly for Certain DTW & ORD Departures. However, Departure Delay Reduction for These Airports is Included in CPs 5 and 6.	0	0	\$21.98	\$0.0	
Total		Improvements in Westgate Departure Delay, Northgate Departure Delay, DC Departure Delay, NY Arrival Delay, and GL Departure Delay			\$38.0	

The estimated ADOC used in Table 1 is based on 1996 Department of Transportation (DOT) Form 41 data, published in 1998 by the Office of Aviation Policy and Plans (APO), assuming a NAS representative traffic mix, and translated into 2001 US dollars. The ADOC estimates were translated into 2001 values using the methodology outlined in the *FAA Airport Benefit-Cost*

1
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* Benefits assessed over 7 month period

Average Delay Reduction per Flight (minutes) Operating Cost Benefits*

Decreased departure delay for NY Westgate 1.9 \$4.5M

Decreased departure delay for NY Northgate 2.2 \$4.1M

Decreased departure delays for DC departures 1.5 \$1.6M

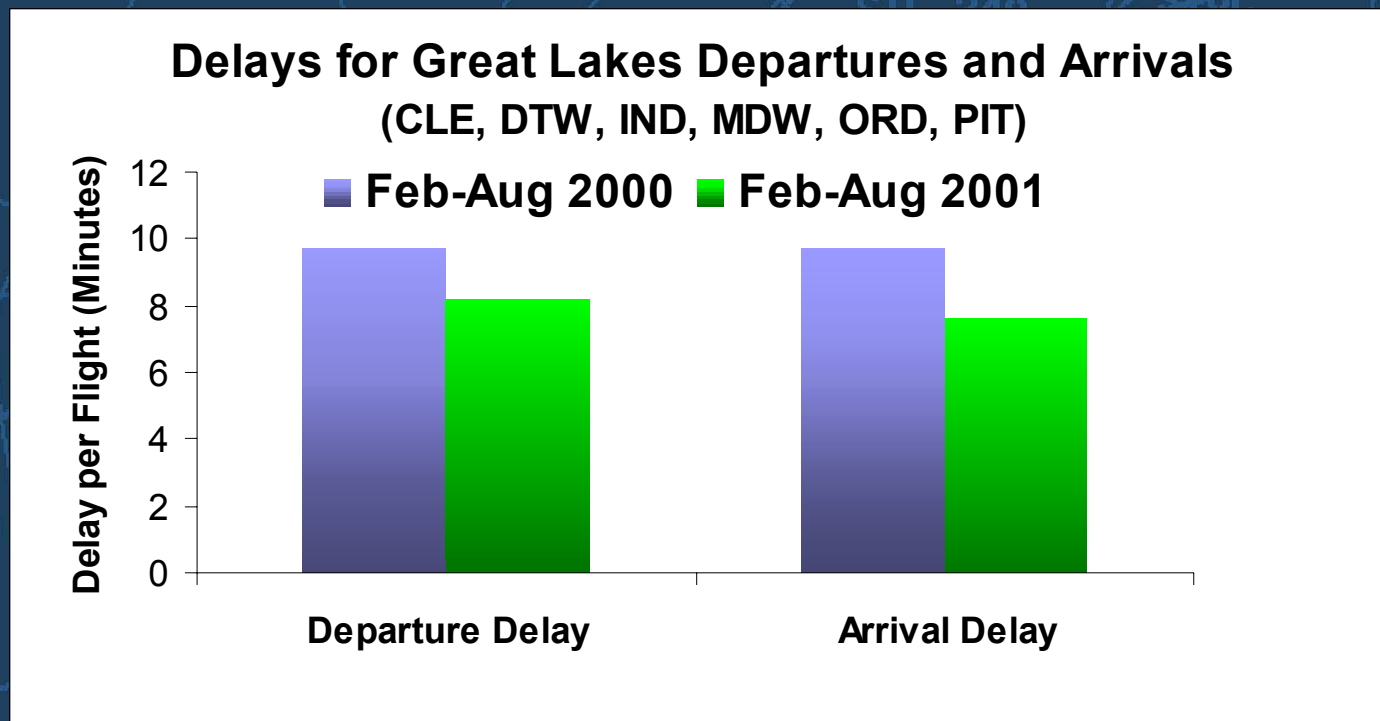
Decreased arrival delay for NY arrivals 3.1 \$5.3M

Decreased departure delay for AGL departures 1.5 \$22.6M

Equivalent annual savings ~\$65M



Chokepoints Benefits

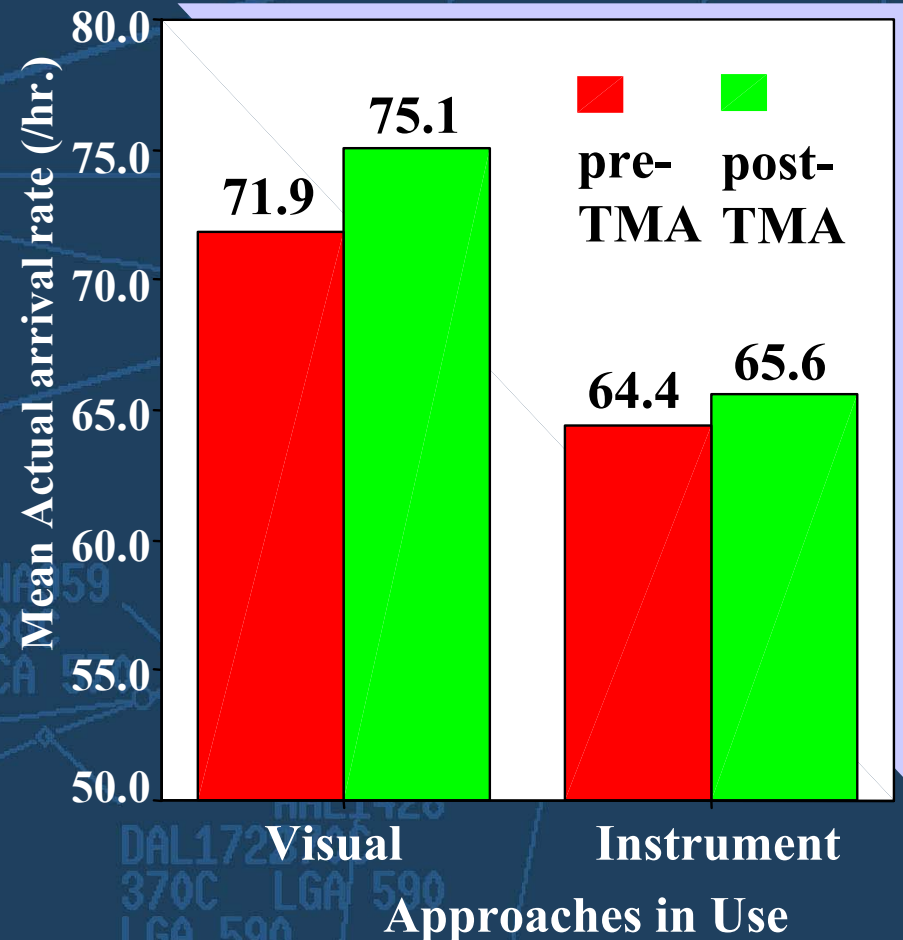


\$39 million per year

2002 Accomplishment & Performance Change: Traffic Management Advisor (TMA) at Seven Sites



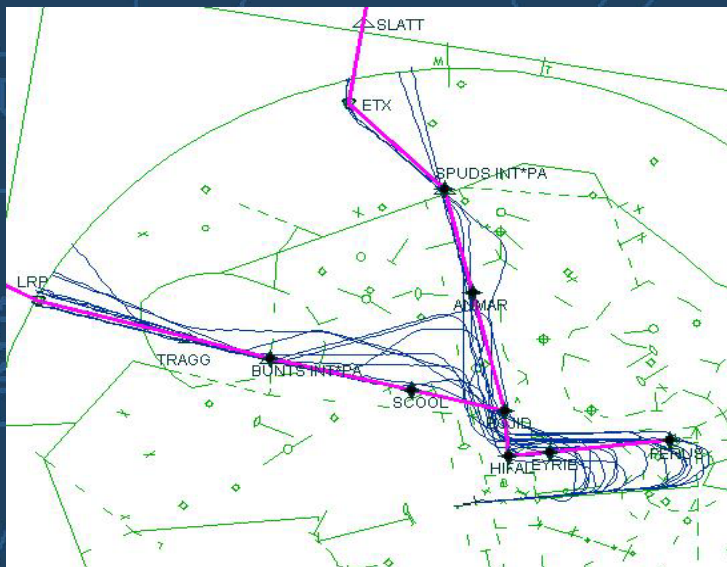
- ✓ Three sites (Dallas, Minneapolis, and Los Angeles) experienced a five percent increase in throughput, and Denver experienced a two percent gain



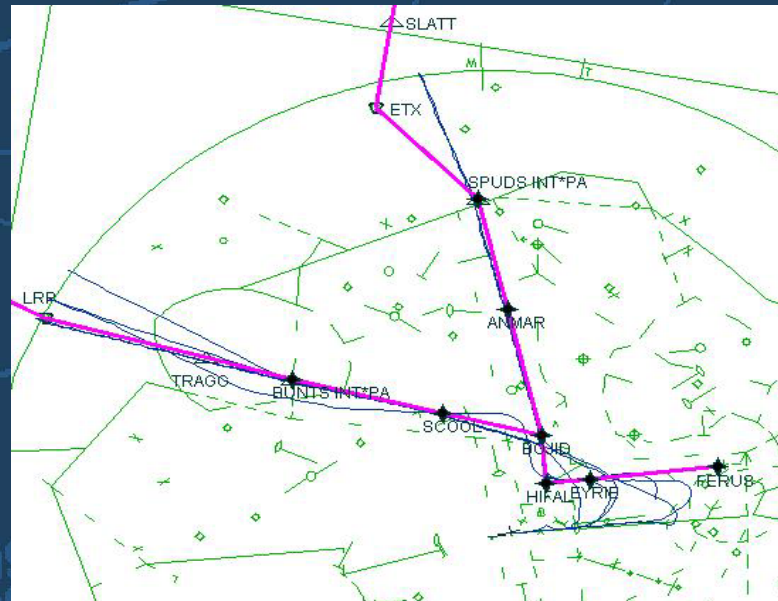


2002 Accomplishment: New and Overlay Area Navigation (RNAV) Routes

✓ 40 RNAV routes completed.



April 2001



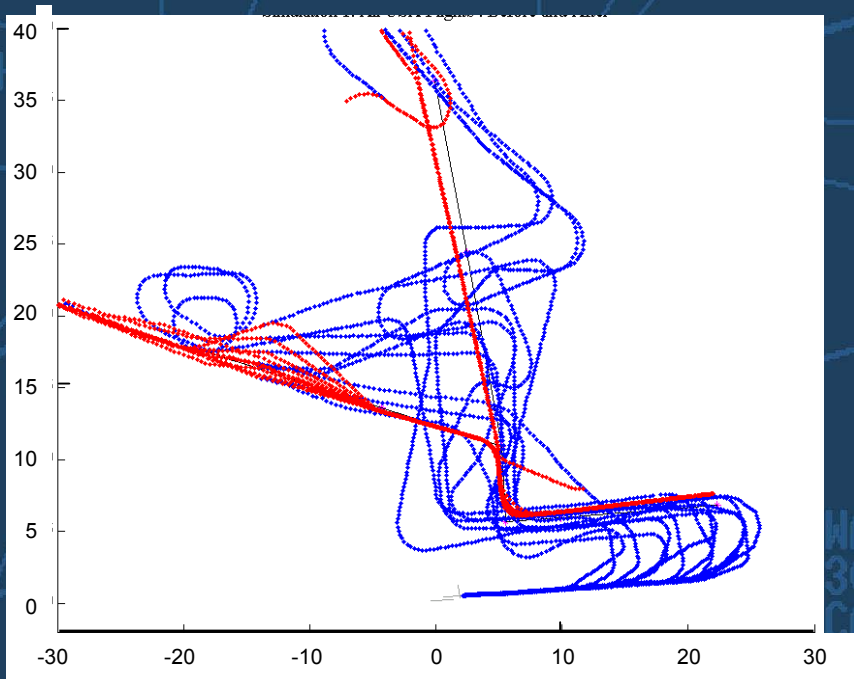
January 2002

Voice and automation data analysis show that it is possible to reduce A/G communications by 30% to 50%

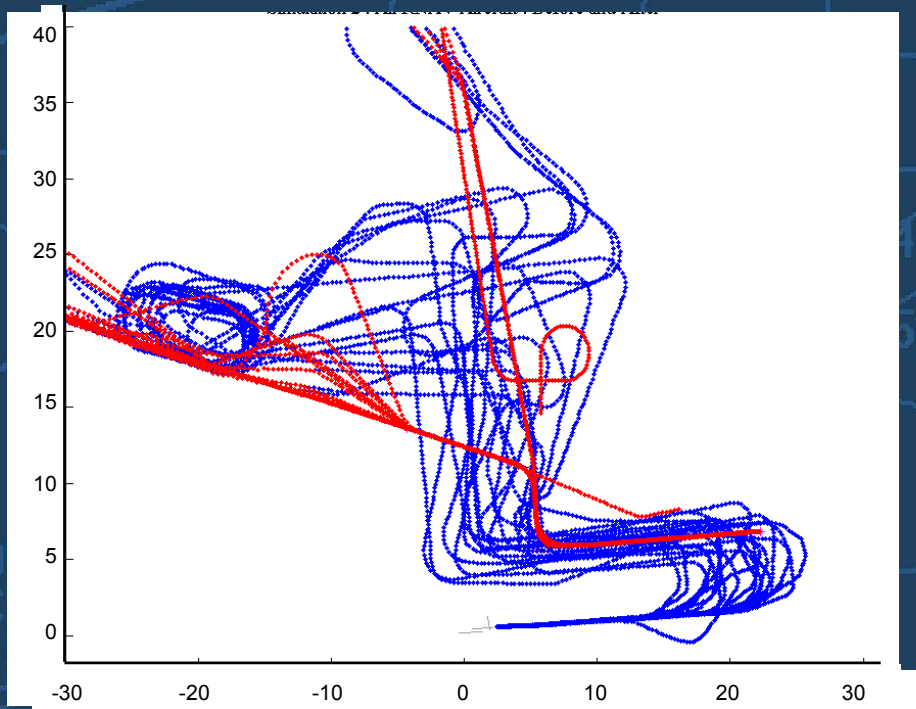


Performance Change: Time and Distance Benefits at Philadelphia

**Simulation 1: All USA Flights:
Before and After**



**Simulation 2: All RNAV Aircraft:
Before and After**



- ✓ Avg. Time Saved: 2-4 min per flight
- ✓ Avg. Distance Saved: 13 - 15 nmi per flight

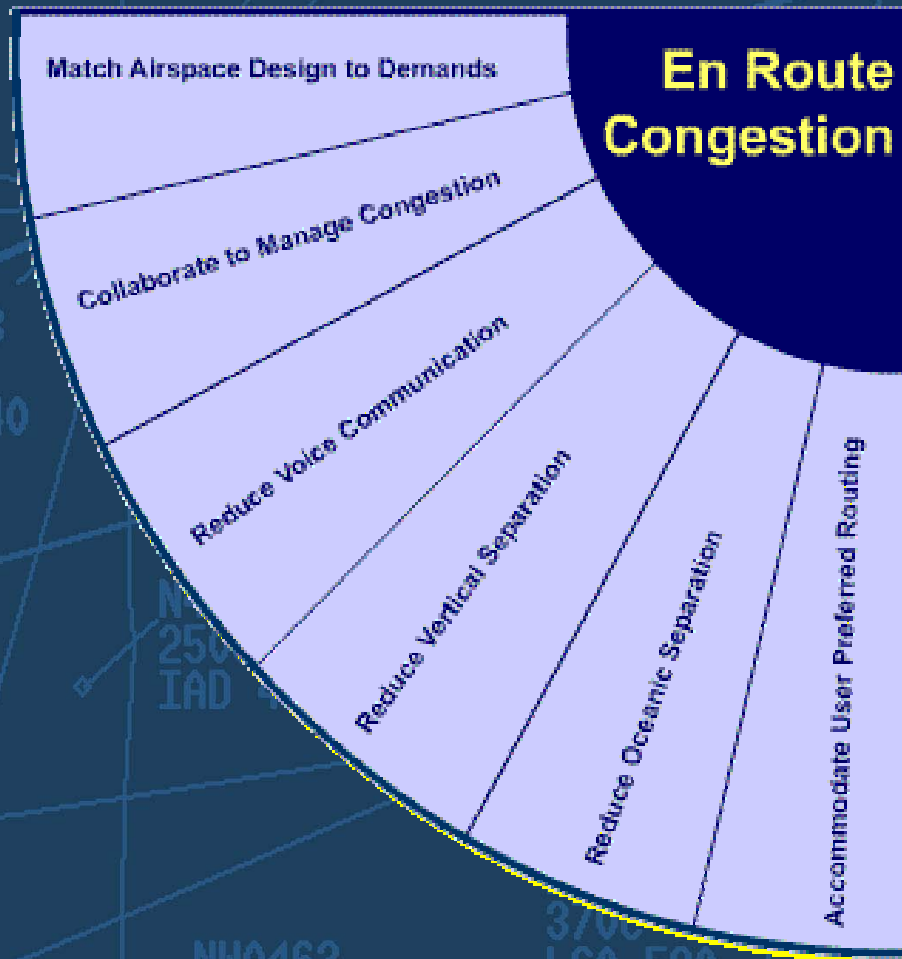


2002 Accomplishment: Las Vegas Four Corner Post Airspace Redesign

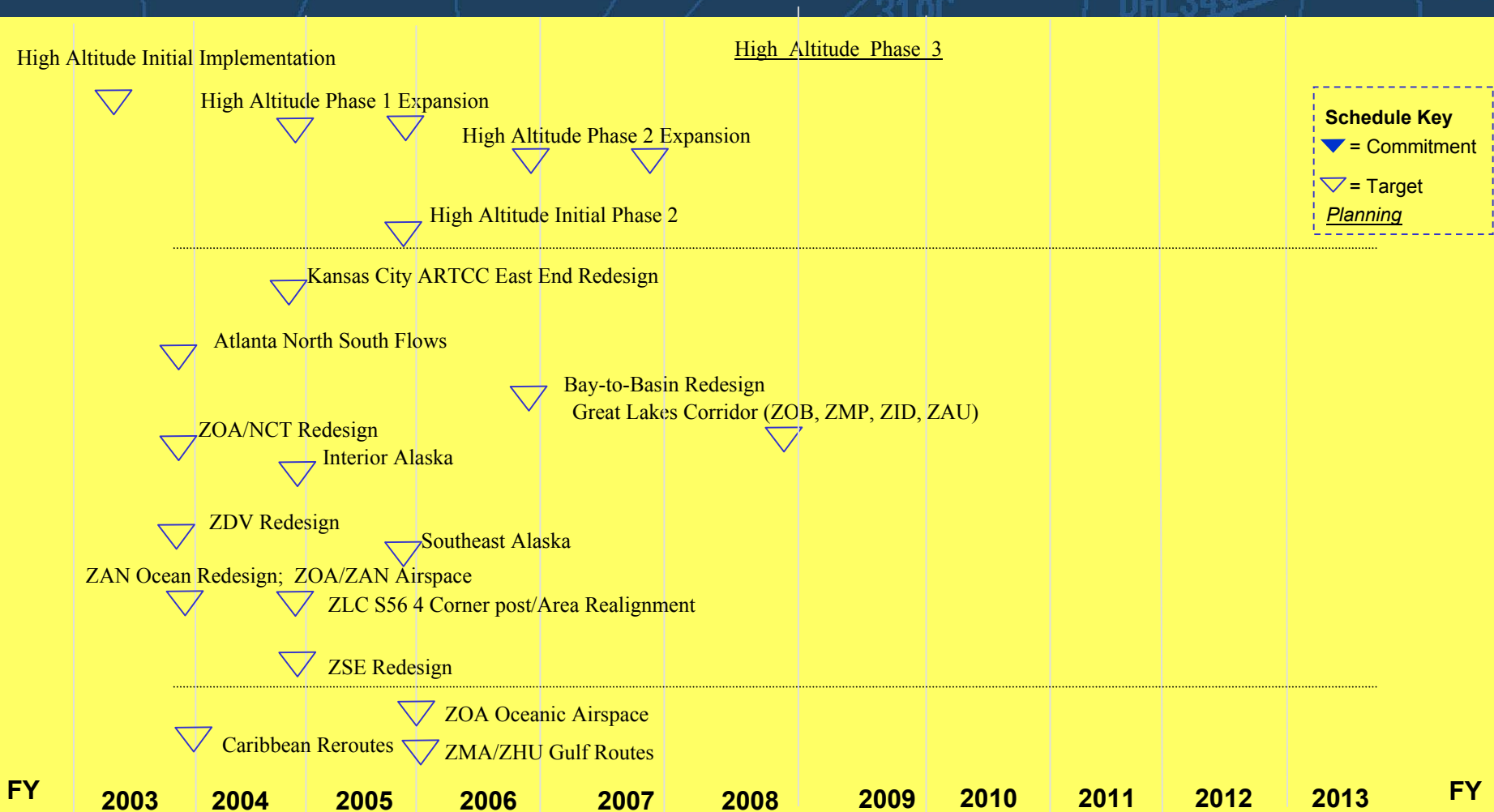
- ✓ Las Vegas implemented the Four Corner Post Airspace Redesign in December 2001
- ✓ Preliminary results confirmed predictions of significant user savings
 - One user reported preliminary savings equate to an annualized savings of \$45 million



En Route Congestion Quadrant Level Review



ER-1 Match Airspace Design to Demands



En Route Congestion

ER-2 Collaborate to Manage Congestion



▽ Flight list for each reroute advisory

▽ Expanded use of diversion recovery tool

▼ Revised procedures to support FCA/FEA solution

Multi-fix Ground Delay Programs
(GDP)

▽ Slot Credit Substitution (SCS)

Metro-area Departure Flow
Planning

▽ Research Multi-center Departure Metering

Early intent flight plan
data processing

Traffic Flow Management Modernization

Schedule Key
▼ = Commitment
▽ = Target
Planning

FY 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 FY

En Route Congestion

ER-3 Reduce Voice Communication



Schedule Key
▼ = Commitment
▽ = Target
Planning

Build 1A Benefits
(efficiency and
congestion)

FY 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 FY

En Route Congestion

ER-4 Reduce Vertical Separation



Schedule Key

▼ = Commitment

▽ = Target

Planning

▽ Operational Use

FY

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

FY

En Route Congestion

ER-6 Reduce Oceanic Separation



Initial Operational Use of 30/30
Separation; one sector



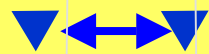
Schedule Key
▼ = Commitment
▽ = Target
Planning

Phased Expansion of
30/30 Elsewhere

FY 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 FY

En Route Congestion

ER-7 Accommodate User Preferred Routing



Remainder of URET Sites

TMA:



ZHU



ZID ZME ZKC



Multi-Center TMA

Schedule Key
▼ = Commitment
▽ = Target
Planning

FY

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

FY